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## ABSTRACT OF THE DISCLOSURE

A method for determining the position and orientation of an object with respect to a reference frame, made up of providing the object with three independent transmitters of electromagnetic radiation, providing three independent receivers of the electromagnetic radiation, each of the receivers having a fixed position in the reference frame, transmitting the electromagnetic radiation, using the transmitters, a first of the transmitters transmitting the electromagnetic radiation including at least a first frequency, a second of the transmitters transmitting the electromagnetic radiation including at least a second frequency different from the first frequency, and a third of the transmitters transmitting the electromagnetic radiation including at least a third frequency different from the first frequency, receiving signals corresponding to the electromagnetic radiation, at all three of the receivers, at a plurality of times, each of the signals including components of at least one of the three frequencies, for each of the receivers, forming a first function of the components including the components of the signal received by the each receiver from the first transmitter at the first frequency, a function of the components including the components of the signal received by the each receiver from the second transmitter at the second frequency, and a function of the components including the components of the signal received by the each transmitter from the third transmitter at the third frequency, the functions being independent of a time delay between the transmitters and the receivers and inferring the position and the orientation of the object from the functions.